PATENT

Atty. Dkt. No. 14.0237-PCT-US (WGEC0064)

IN THE CLAIMS:

Please amend the claims as follows.

1.   (Currently Amended)   A method, comprising:

acquiring, or retrieving from storage, one or more acceleration wavefield traces;

applying a gain recover to the acceleration wavefield traces;

applying a normal moveout correction to the gain recovered acceleration wavefield traces;

muting the normal moveout corrected acceleration wavefield traces;

stacking the muted acceleration wavefield traces; and

applying, using a processor, a time migration to the stacked acceleration wavefield traces.

2-9.   (Cancelled)

10.   (Currently Amended)   An apparatus, comprising:

an input interface for receiving one or more acceleration wavefield traces;

a data processor; and

memory comprising program instructions executable by the processor to:

acquire the acceleration wavefield traces;

apply a gain recover to the acceleration wavefield traces;

apply a normal moveout correction to the gain recovered acceleration wavefield traces;

mute the normal moveout corrected acceleration wavefield traces;

stack the muted acceleration wavefield traces; and

apply a time migration to the stacked acceleration wavefield traces.

11.   (Cancelled)

12.   (Previously Presented)   A seismic surveying arrangement comprising:

a seismic source for emitting seismic energy;

a seismic receiver for acquiring seismic data representative of the acceleration wavefield traces, the seismic receiver being spaced from the seismic source; and

an apparatus as claimed in claim 10 for processing the acceleration wavefield traces acquired by the receiver.

13.   (Original) A seismic surveying arrangement as claimed in claim 12 wherein the seismic source and the receiver are each disposed at or on the earth's surface.

14.   (Original) A seismic surveying arrangement as claimed in claim 12 wherein the seismic source is disposed at or on the earth's surface and the receiver is disposed within a borehole.

15.   (Original) A seismic surveying arrangement as claimed in claim 12 wherein the seismic source is disposed in a water column and the receiver is located at the base of the water column.

16.   (Original) A seismic surveying arrangement as claimed in claim 12 wherein the seismic source is disposed in a water column and the receiver is disposed within a borehole.

17-20. (Cancelled)

21.   (Previously Presented)   The method of claim 1, further comprising removing an effect of a signature of the source used to acquire the acceleration wavefield traces.

22.   (Currently Amended)   The method of claim 1, further comprising removing coherent noise from the <u>gain recovered</u> acceleration wavefield traces.

23.   (Currently Amended)   The method of claim 1, further comprising applying a demultiple algorithm <u>to the gain recovered acceleration wavefield traces</u> to remove

events that involve multiple passes through a water column in which a receiver used to acquire the acceleration wavefield traces is disposed.

24.   (Currently Amended)   The method of claim 1, further comprising applying a trace equalization algorithm to the muted acceleration wavefield traces.

25.   (Currently Amended)   The method of claim 1, further comprising applying a pre-stack deconvolution algorithm to the gain recovered acceleration wavefield traces to attenuate short period of reverberations.

26.   (Currently Amended)   The method of claim 1, further comprising applying a post-stack deconvolution algorithm to the stacked acceleration wavefield traces to whiten a signal spectrum.

27.   (Currently Amended)   The method of claim 26, further comprising applying a time-varying bandpass filter to the stacked acceleration wavefield traces.

28.   (Previously Presented)   The method of claim 1, further comprising equalizing amplitudes of the stacked acceleration wavefield traces.

29.   (Currently Amended)   A method, comprising:
        acquiring, or retrieving from storage, seismic data representative of only acceleration wavefield traces;
        applying a gain recover to the seismic data;
        applying a normal moveout correction to the gain recovered seismic data;
        muting the normal moveout corrected seismic data;
        stacking the muted seismic data; and
        applying, using a processor, a time migration to the stacked seismic data acceleration wavefield traces.